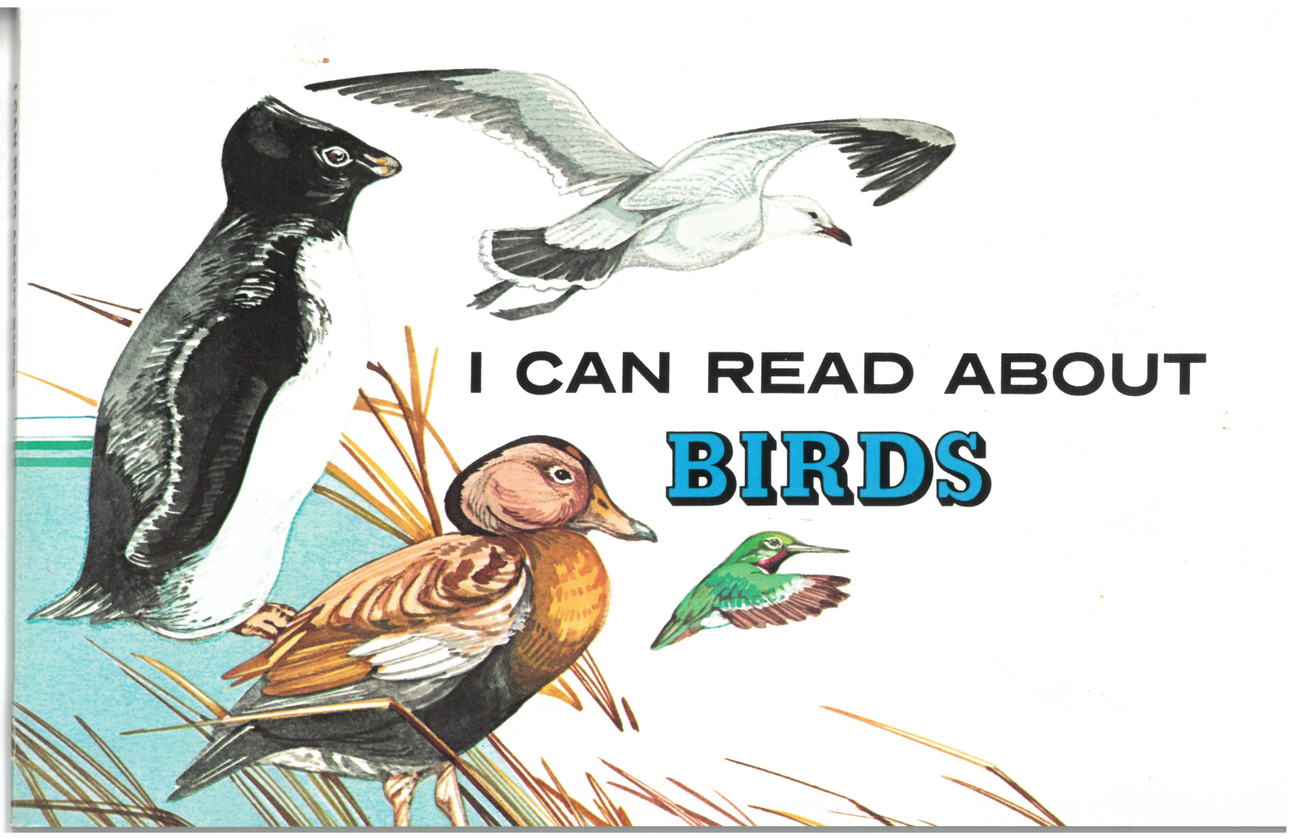
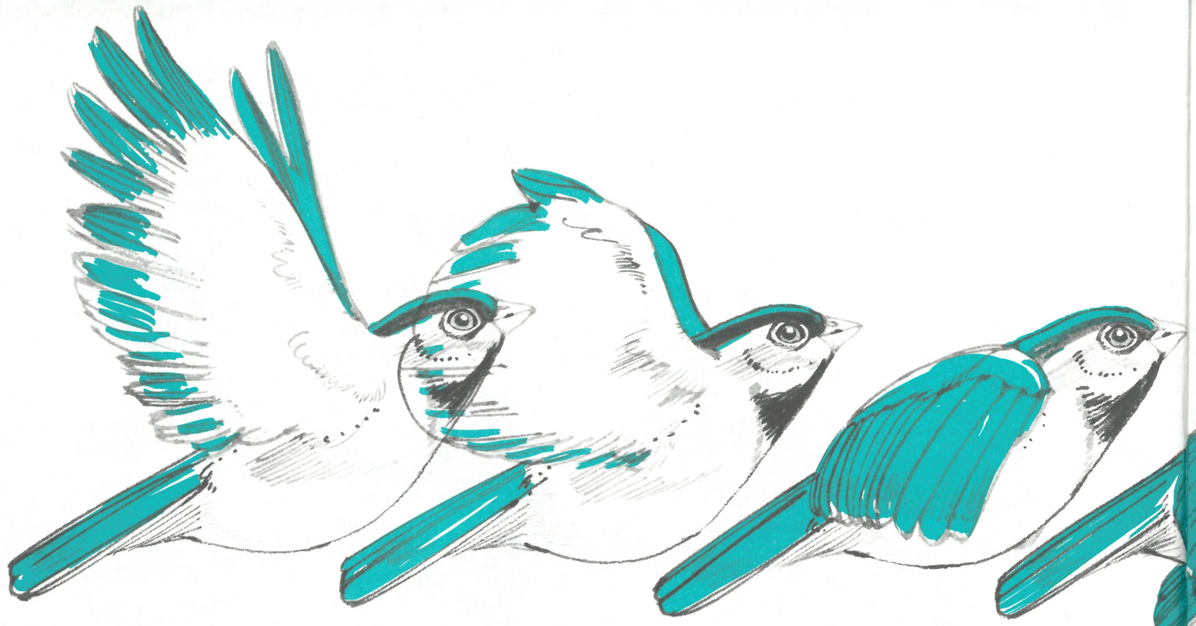


# I CAN READ ABOUT BIRDS



# I CAN READ ABOUT BIRDS

Written by Ellen Schultz
Illustrated by Joel Snyder

Troll Associates

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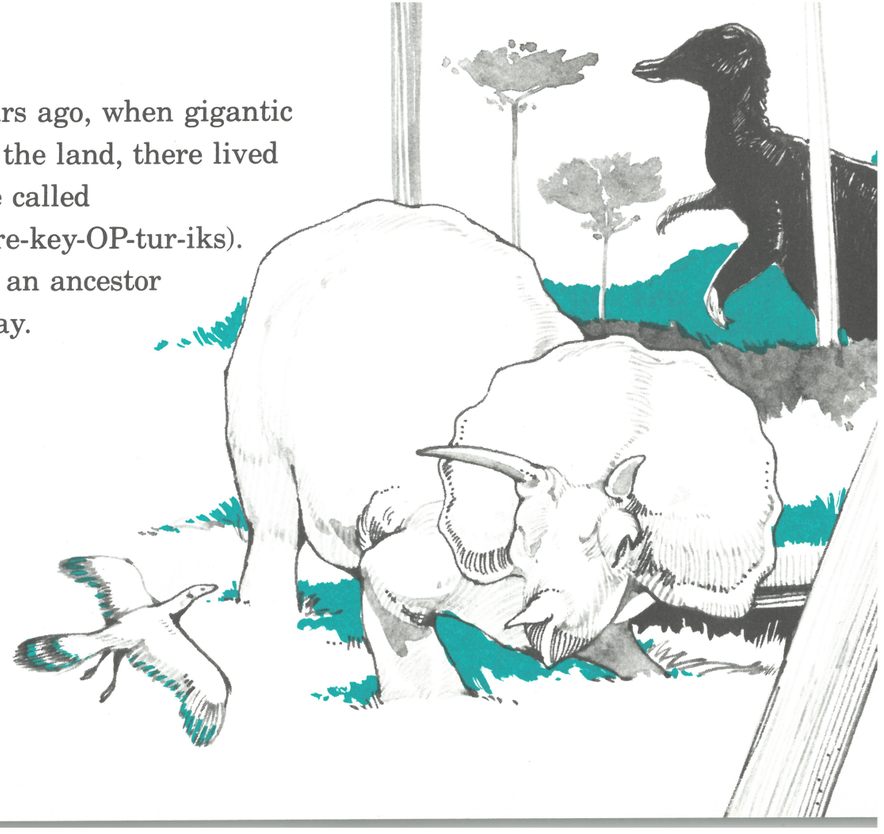
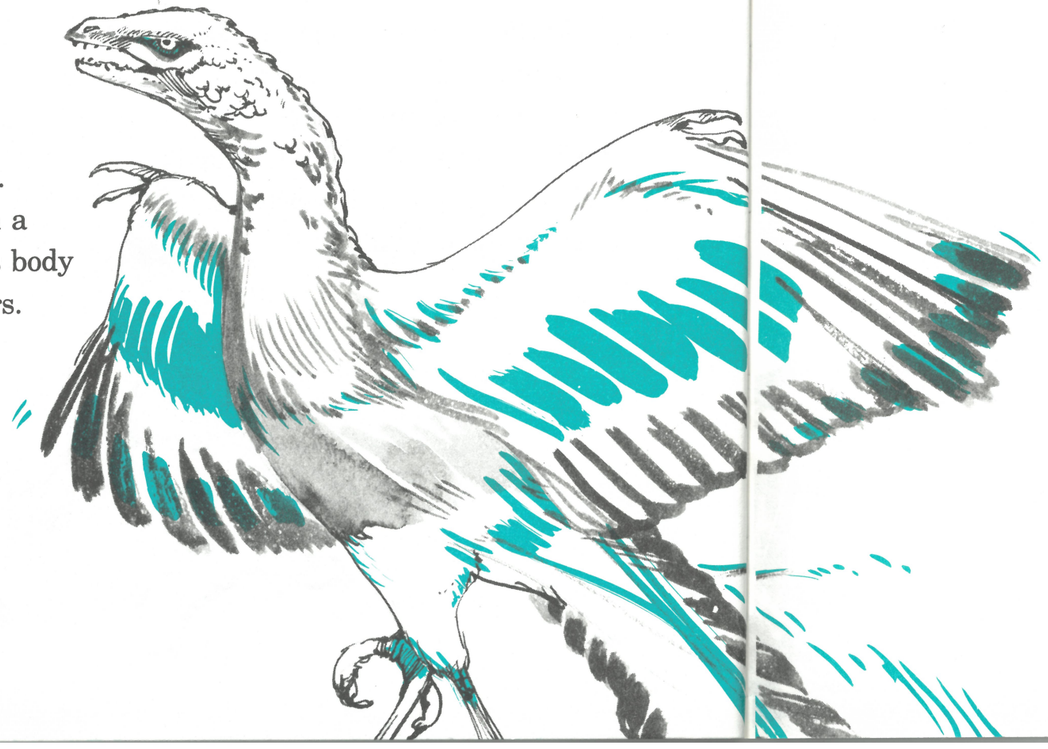
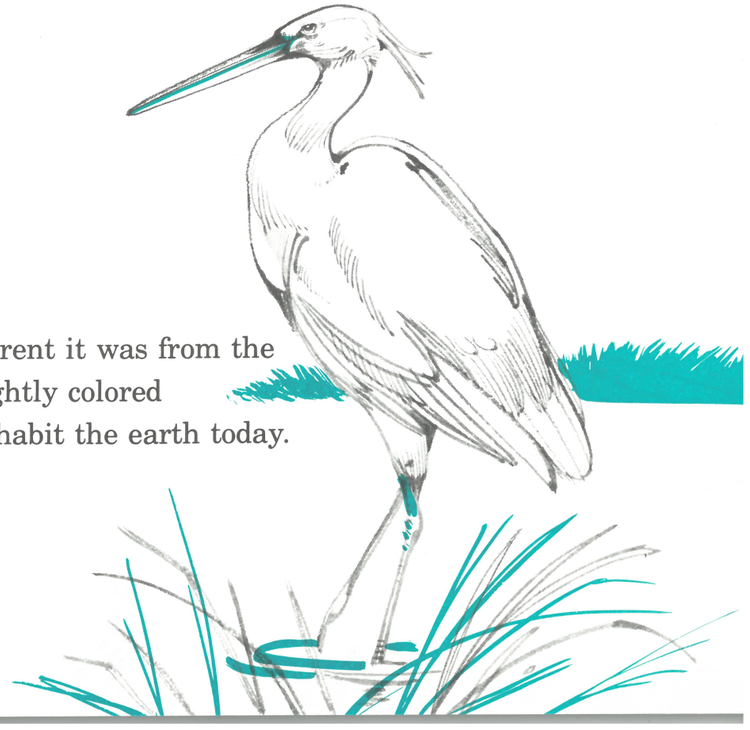
Millions of years ago, when gigantic dinosaurs roamed the land, there lived a strange creature called Archaeopteryx (Are-key-OP-tur-iks). This creature was an ancestor of the birds of today.



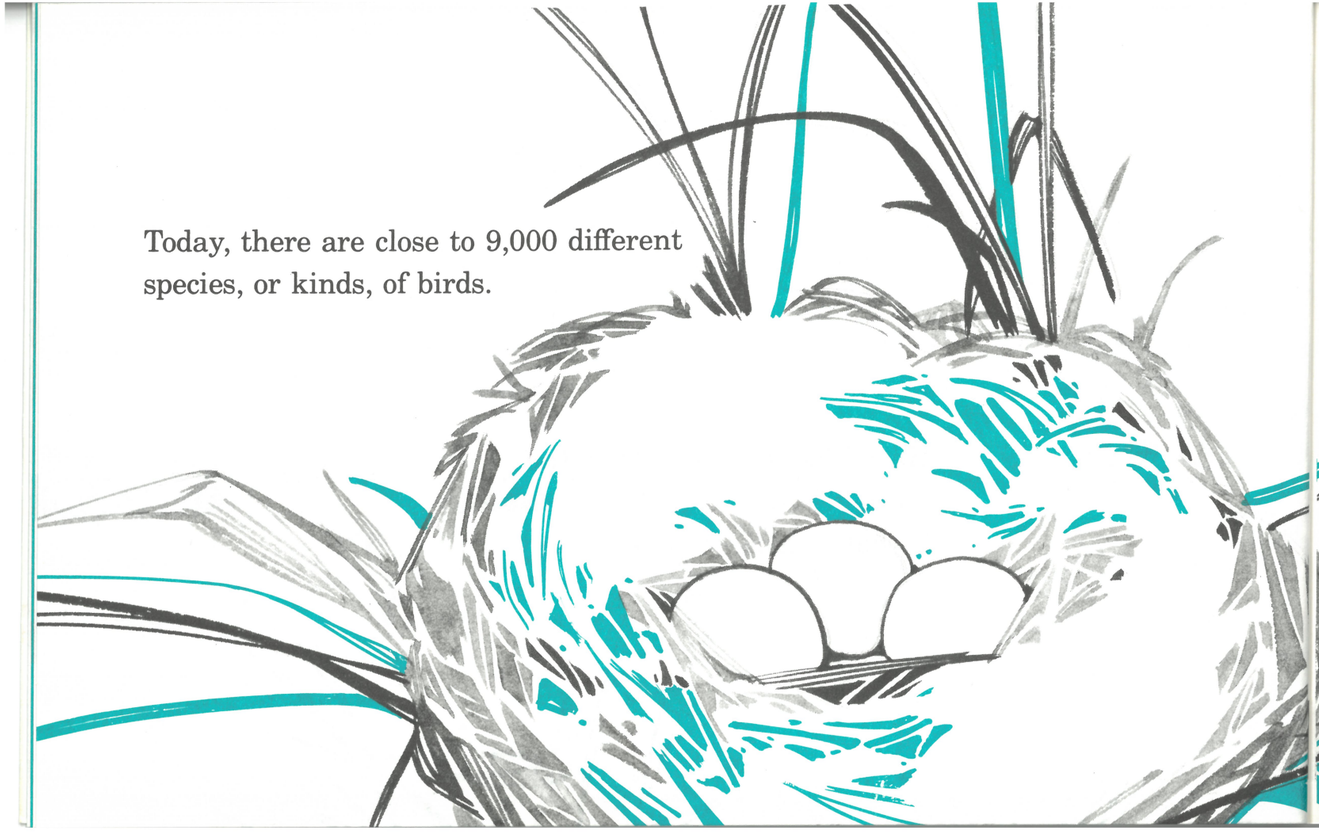
How strange it looked.
It was a little larger than a
crow, and it had a lizard's body
covered with dark feathers.
It had lots of sharp teeth
and long pointed claws.

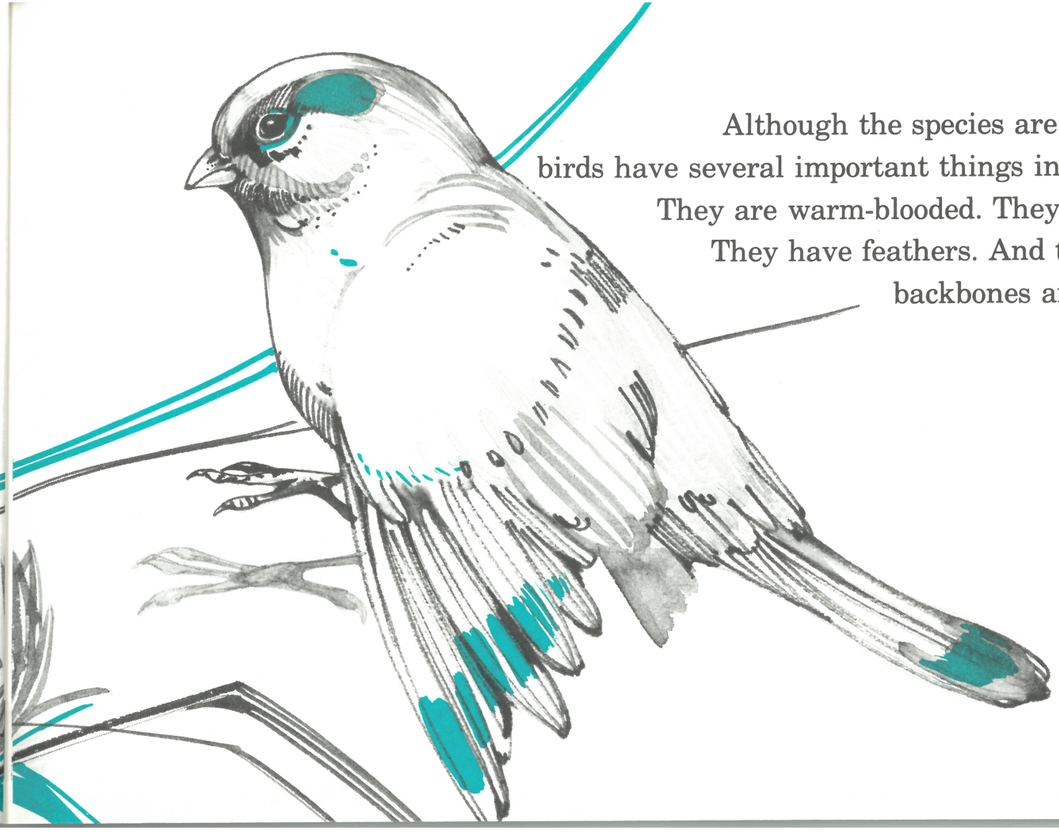


How different it was from the
graceful, brightly colored
birds that inhabit the earth today.



Today, there are close to 9,000 different species, or kinds, of birds.





Although the species are different, birds have several important things in common. They are warm-blooded. They lay eggs. They have feathers. And they have backbones and wings.

Birds are warm-blooded animals. They are able to control their body temperature, regardless of the outside weather.

Their hearts beat very rapidly, using a great deal of energy. In order to maintain this energy, most birds must eat several times an hour. Some baby birds eat their own weight in food a day.

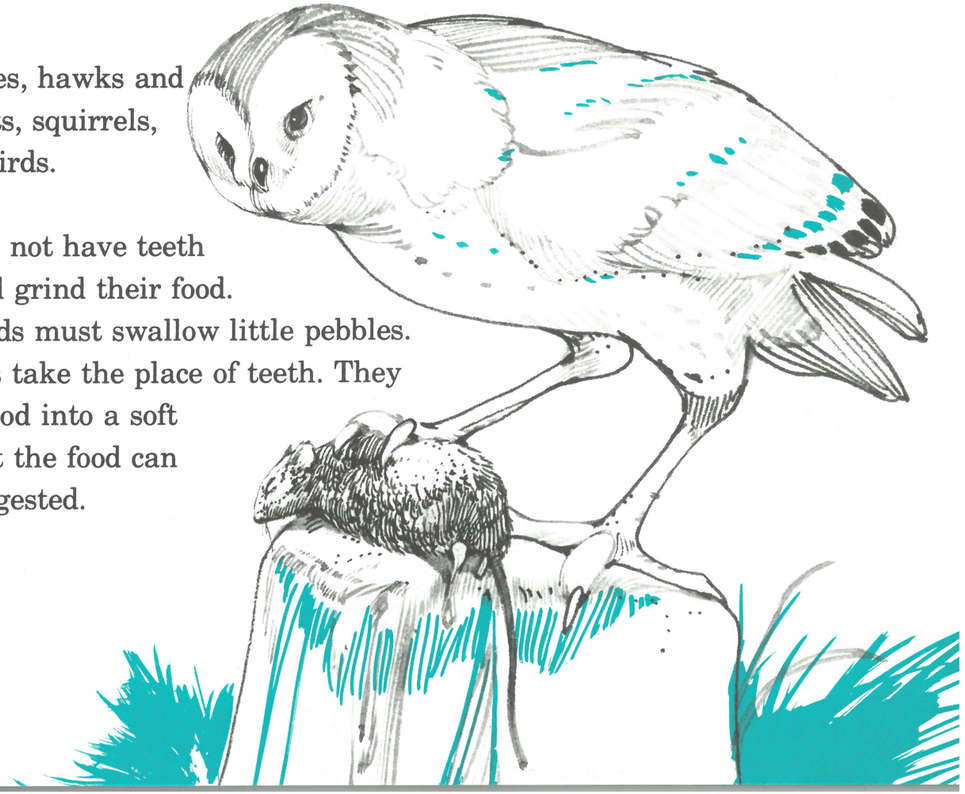
Kingfishers and herons catch fish
with their powerful beaks.

Different birds
eat different foods.

Sparrows like seeds.
Swallows and chickadees eat
insects.

And vultures, hawks and
owls eat rats, squirrels,
and other birds.

Birds do not have teeth
to chew and grind their food.
So most birds must swallow little pebbles.
The pebbles take the place of teeth. They
grind the food into a soft
pulp so that the food can
be easily digested.



A bird's skeleton
is strong and streamlined,
just like an airplane.

And birds have light, yet rigid,
backbones. Their lightweight bones
make it easier for them to fly.

Many of their bones are long, thin, and hollow. Some
of them actually fill with air to help keep the bird aloft.

How different
from the Archaeopteryx,
whose bones were solid
and heavy.

The next time you see a bird, look closely at its wings. After takeoff, the wings move upward. The feathers spread apart to let air through. Then the wings move downward.

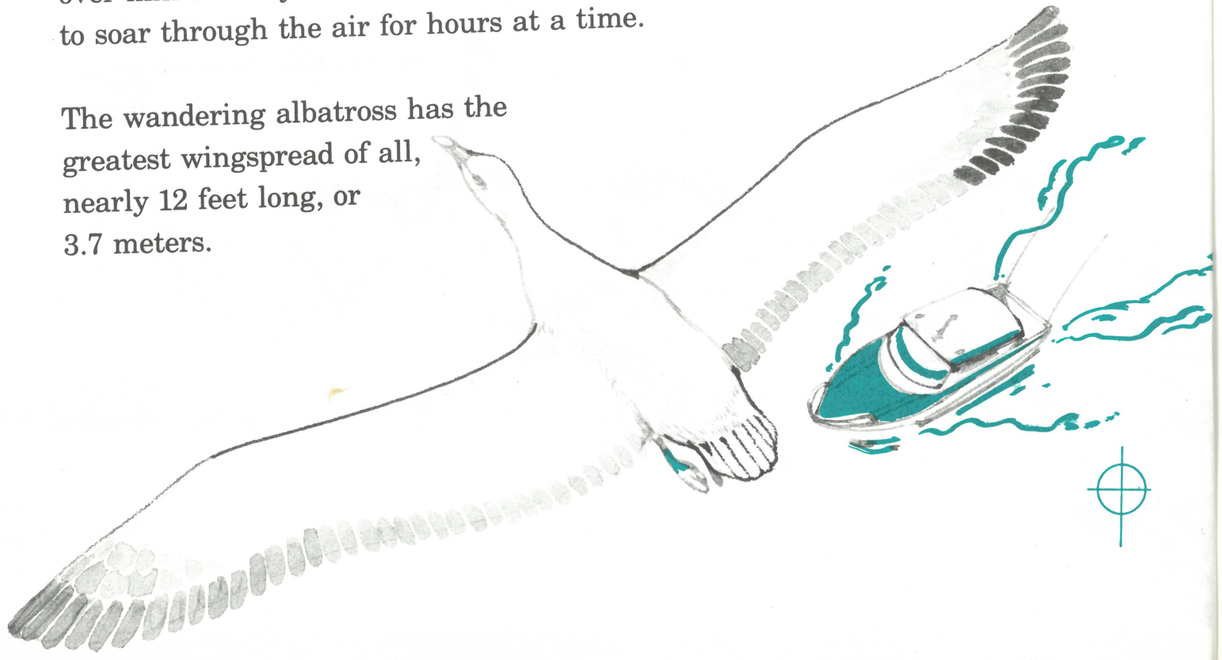
The downstroke is most important. Because as the wings move down, they also push the bird through the air.

The feathers stay tightly closed so no air can pass through. In this way the bird is able to move quickly. Then the wings move upward and the process begins again.

The bird uses its tail feathers for steering and for stopping.

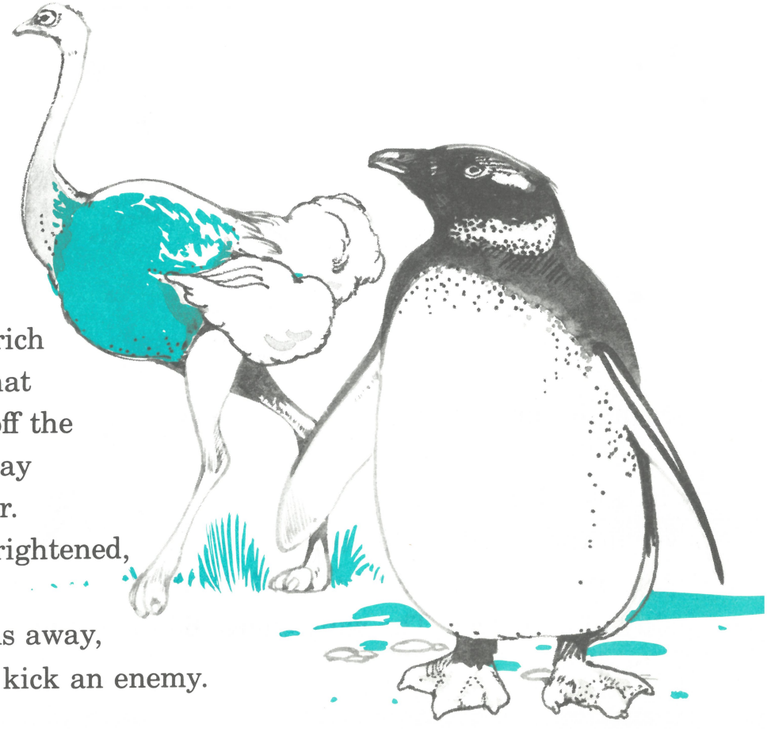
Some birds have developed long, graceful wings over millions of years. This has allowed them to soar through the air for hours at a time.

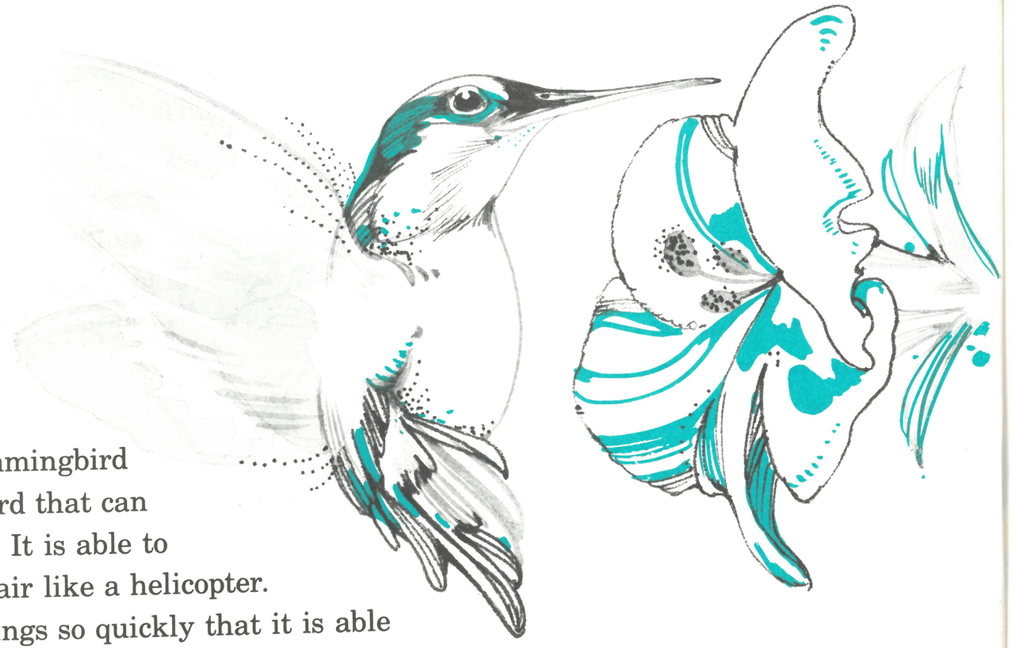
The wandering albatross has the greatest wingspread of all, nearly 12 feet long, or 3.7 meters.



Not all birds can fly. The penguin and the ostrich have short, tiny wings that could never carry them off the ground. They prefer to stay on land or near the water.

When the ostrich is frightened, it does not stick its head in the sand. It either runs away, or uses its strong legs to kick an enemy.



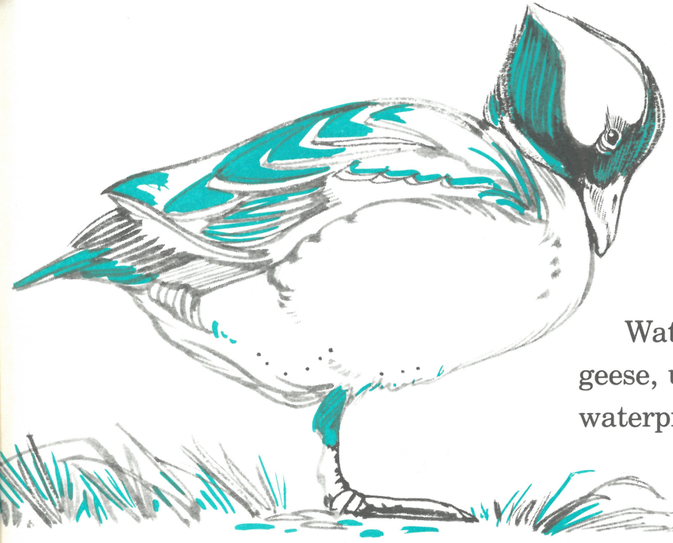


The tiny hummingbird is the only bird that can fly backward. It is able to hover in the air like a helicopter. It flaps its wings so quickly that it is able to stay in one place. The wings move 60 to 70 times a second!

Have you ever looked closely at a feather?

The largest of the feathers are the *primary* or *contour* feathers. These feathers are used in flight. Birds cannot fly without feathers.

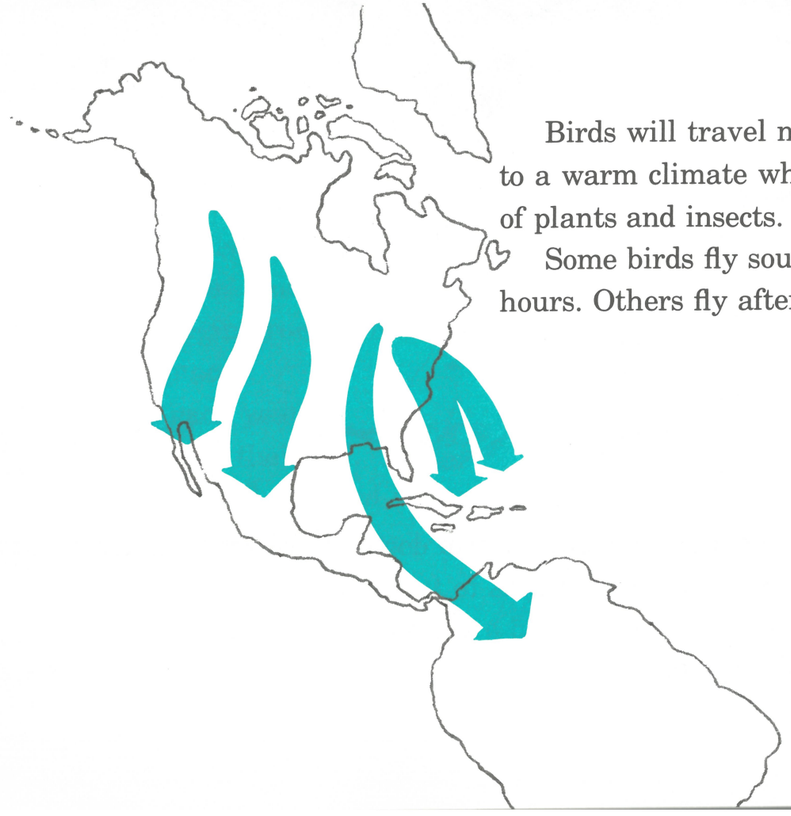
Underneath the flight feathers are many soft feathers called *down*. These feathers keep the bird's body warm. Birds grow warm fluffy down as the winter season approaches.



Waterbirds, such as ducks and geese, usually have the thickest layer of waterproof down.

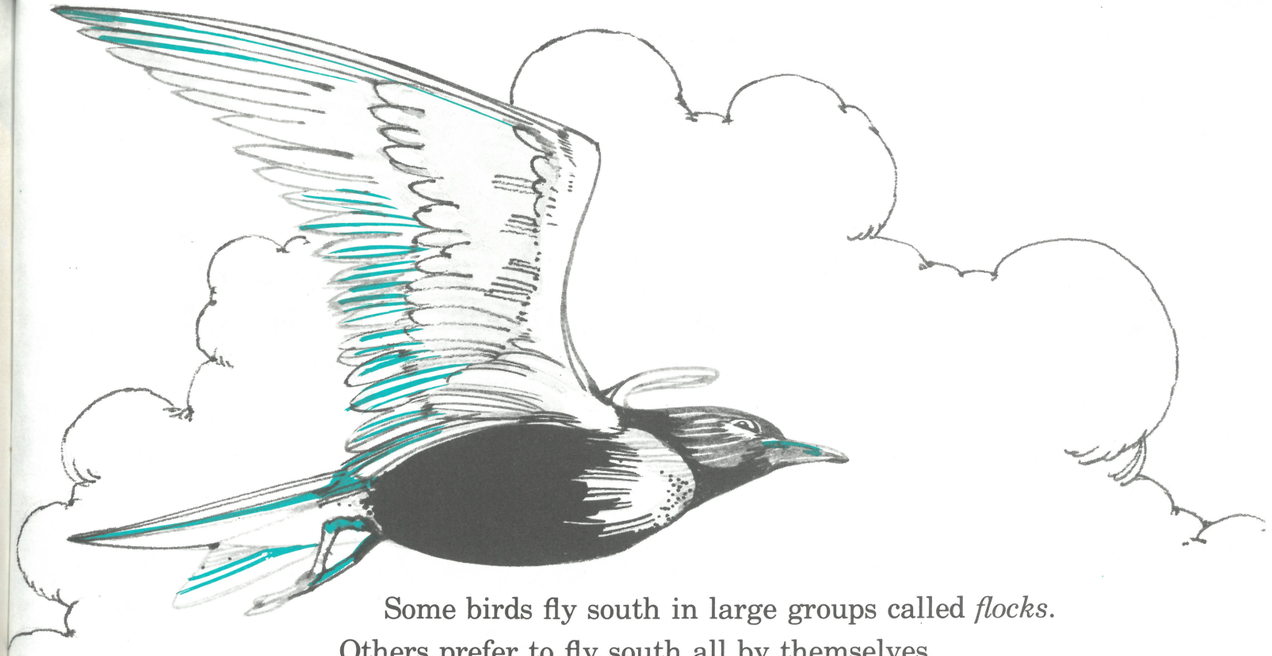
Sometimes, feathers break and fall out. When this happens, new feathers begin growing in to take their place.
At least once each year, birds *molt,* or lose their old, worn-out feathers. But a bird always has enough feathers left to fly.

Some birds do not grow enough warm down to protect them from the cold winter. So as summer begins to turn into fall, certain species of birds make the journey to a warmer climate. This journey is called *migration*.



Birds will travel many different routes to a warm climate where there are plenty of plants and insects.

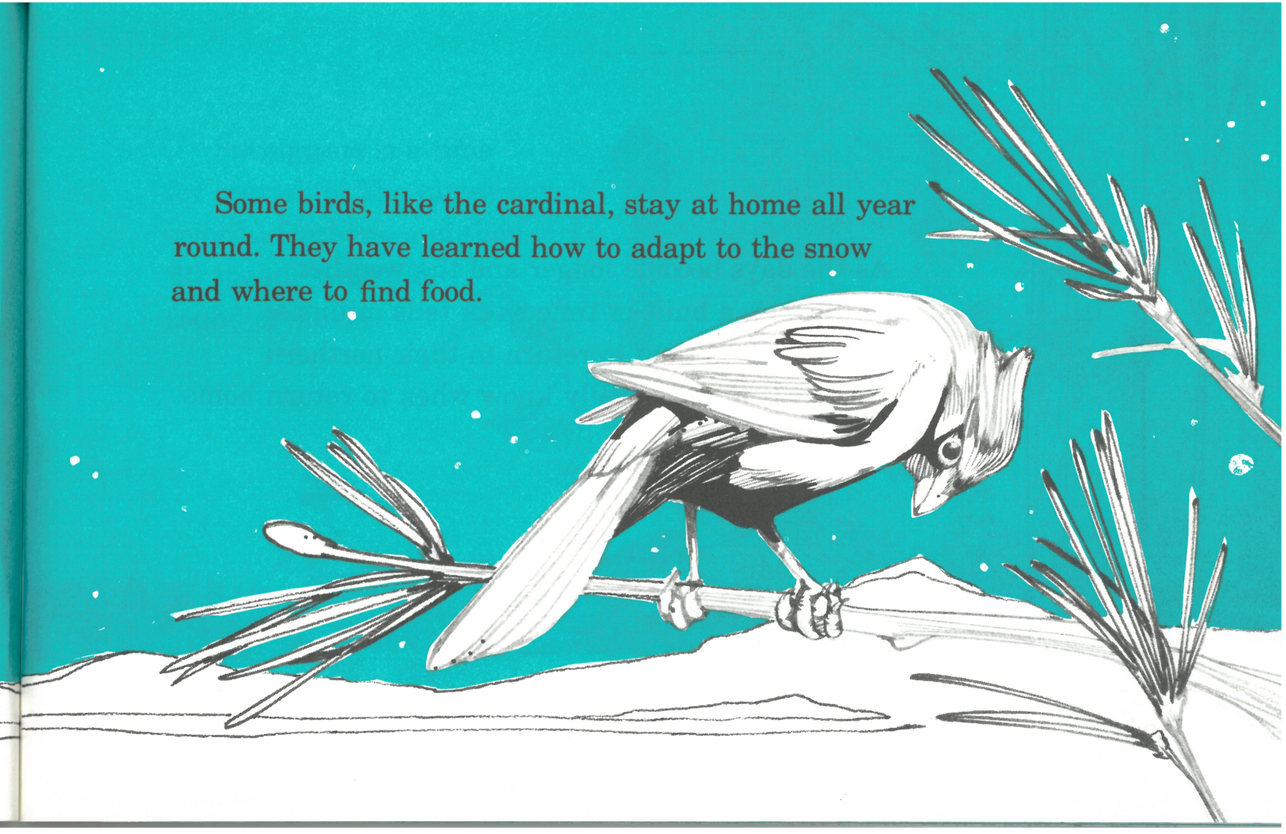
Some birds fly south during the daylight hours. Others fly after it is dark.



Some birds fly south in large groups called *flocks*. Others prefer to fly south all by themselves.

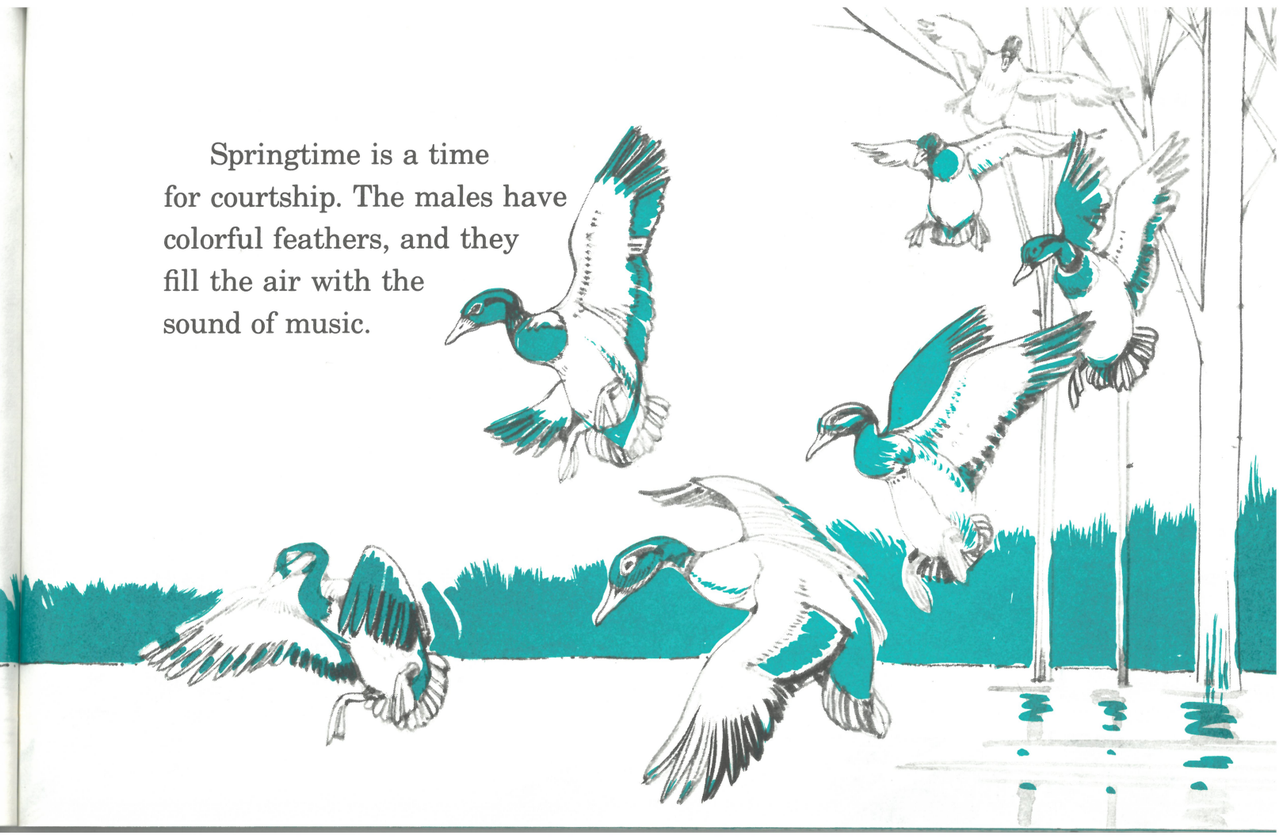
Their route is guided year after year by familiar things. Birds use mountains, oceans, cloud patterns, and stars to help guide them on their way. Once they arrive, they will spend three or four months in the warmer climate.

Some birds, like the cardinal, stay at home all year round. They have learned how to adapt to the snow and where to find food.

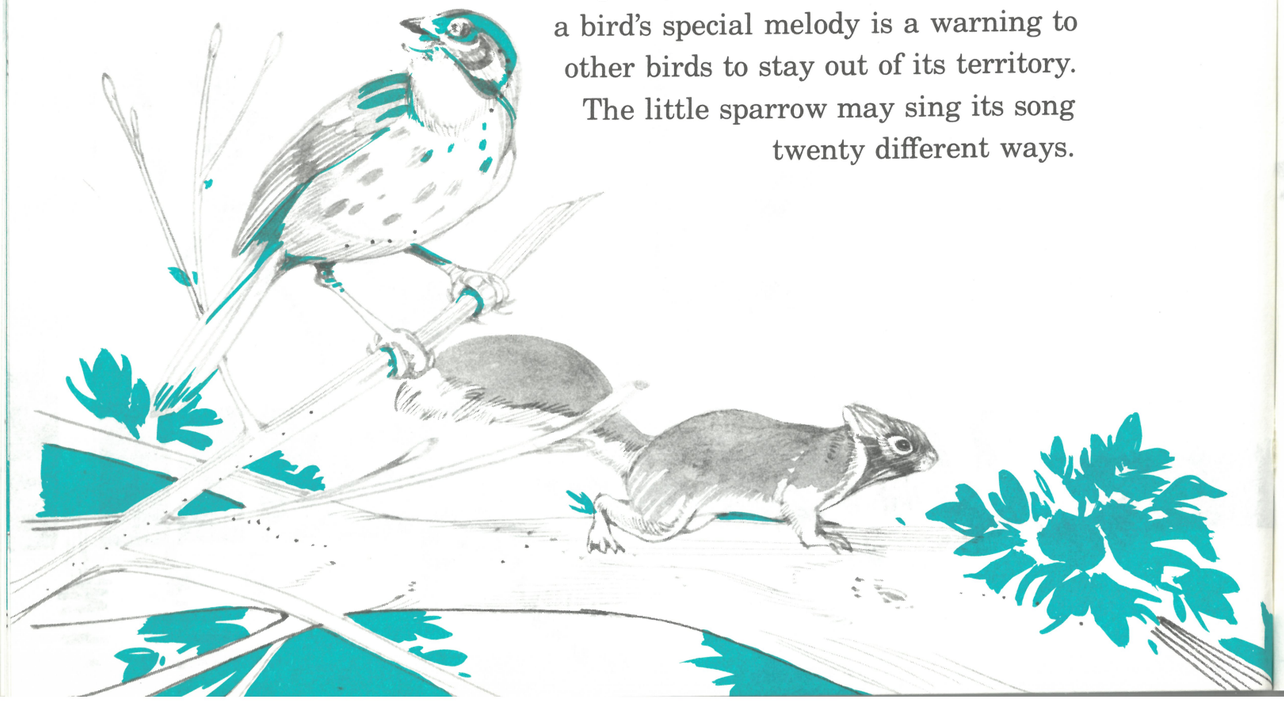


As the days become longer and the weather turns warmer, a built-in time clock tells millions of birds that it is time to return to their northern homes. Birds just naturally know when to return home.

Springtime is a time for courtship. The males have colorful feathers, and they fill the air with the sound of music.

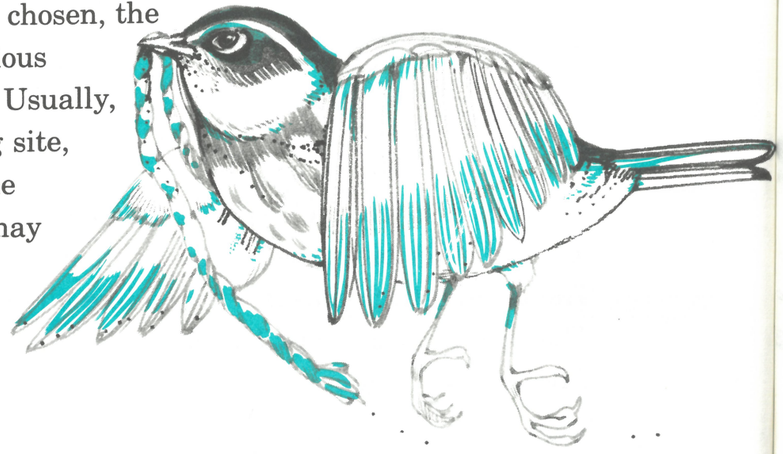


But a bird does not sing only to attract a mate. Very often a bird's special melody is a warning to other birds to stay out of its territory. The little sparrow may sing its song twenty different ways.

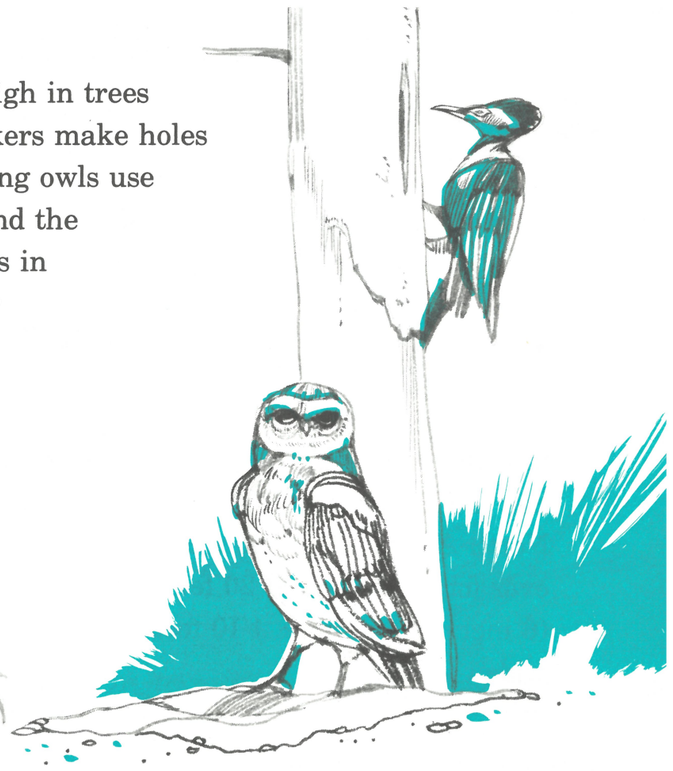


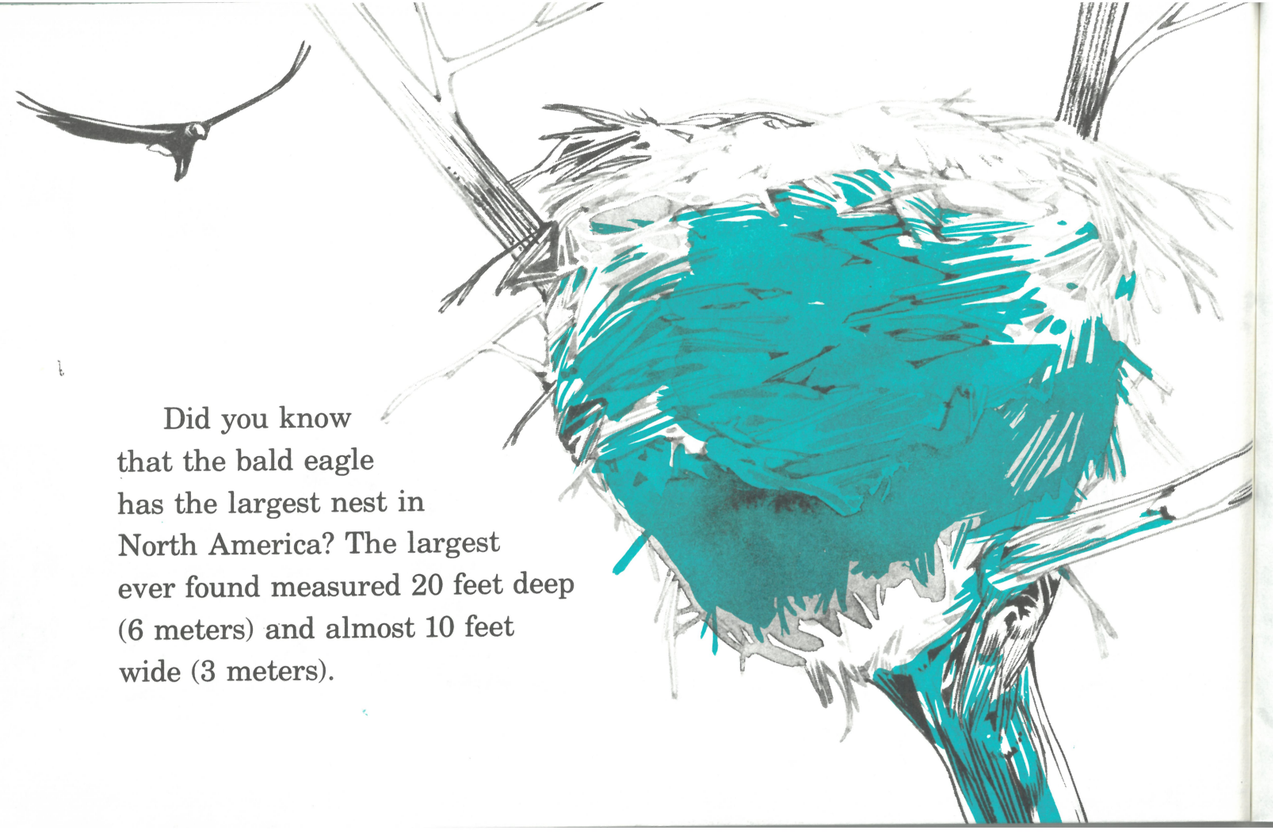
Birds also use their special language to warn other birds that an enemy is approaching. The timid ostrich makes a sound like a lion. The catbird meows just like a cat. And the owl hoots.

In the springtime,
the loveliest songs are sung to the females.
As soon as a mate has been chosen, the
couple gets down to the serious
business of building a nest. Usually,
the male selects the nesting site,
while the female gathers the
building materials. These may
be grasses, twigs, hairs,
pebbles, plants, mud ...
whatever can be found.



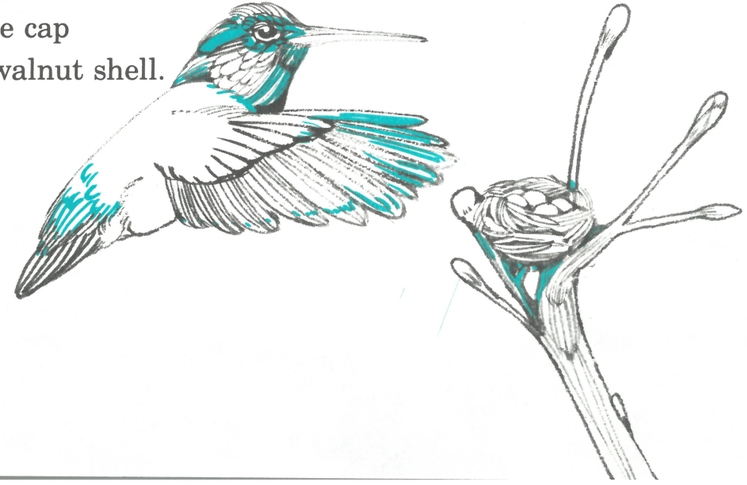
Bald eagles build nests high in trees
or on rocky ledges. Woodpeckers make holes
in dead tree trunks. Burrowing owls use
tunnels below the ground. And the
lazy cowbird just lays its eggs in
another bird's nest.





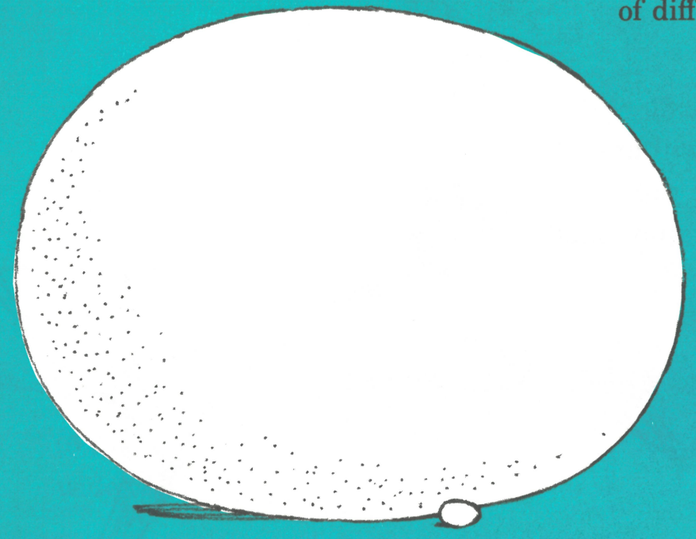
Did you know
that the bald eagle
has the largest nest in
North America? The largest
ever found measured 20 feet deep
(6 meters) and almost 10 feet
wide (3 meters).

The hummingbird's nest
is so small that it will fit
inside a soda bottle cap
or into an empty walnut shell.



Most birds lay from four to eight eggs a year.

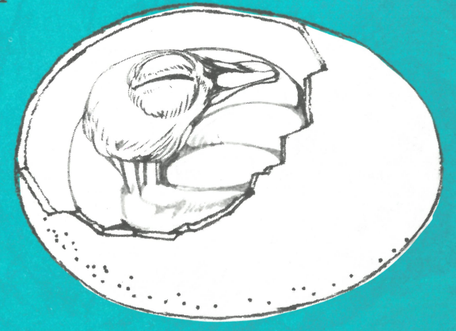
Different species have eggs that are
of different sizes and colors.

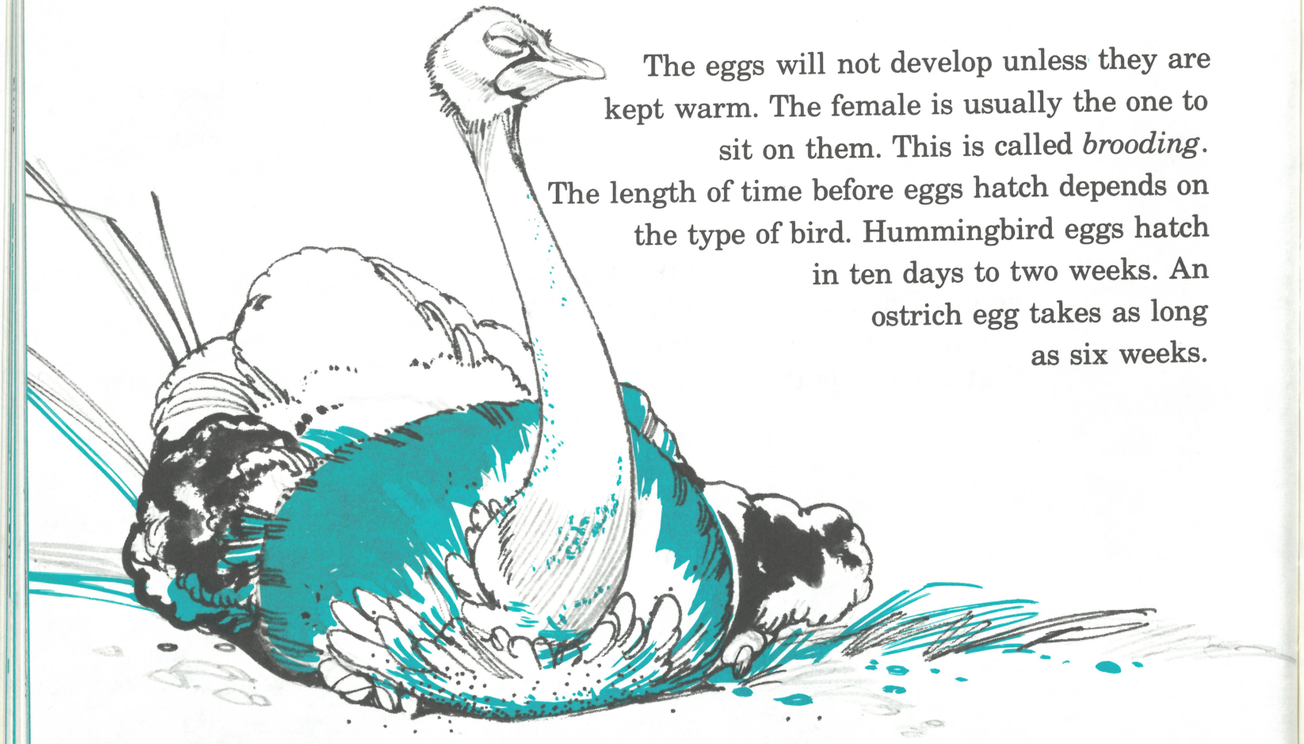


The biggest egg of all
is the ostrich egg.
It is wide and round and
weighs about 3 pounds, or
1.4 kilograms.
The hummingbird lays
the smallest of all.

Some eggs are speckled;
others are white, blue, brown,
green, red, or gray.

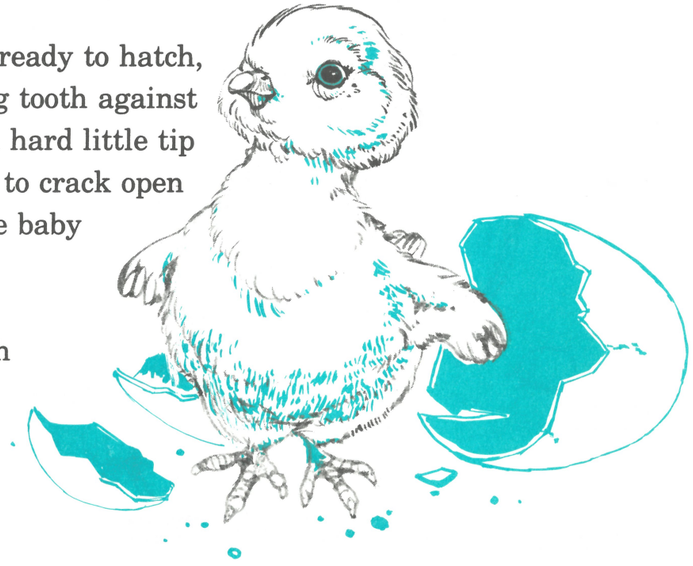
Inside the egg, the tiny baby
gets nourishment from the yellow yolk
and from the white albumen
that surrounds it.



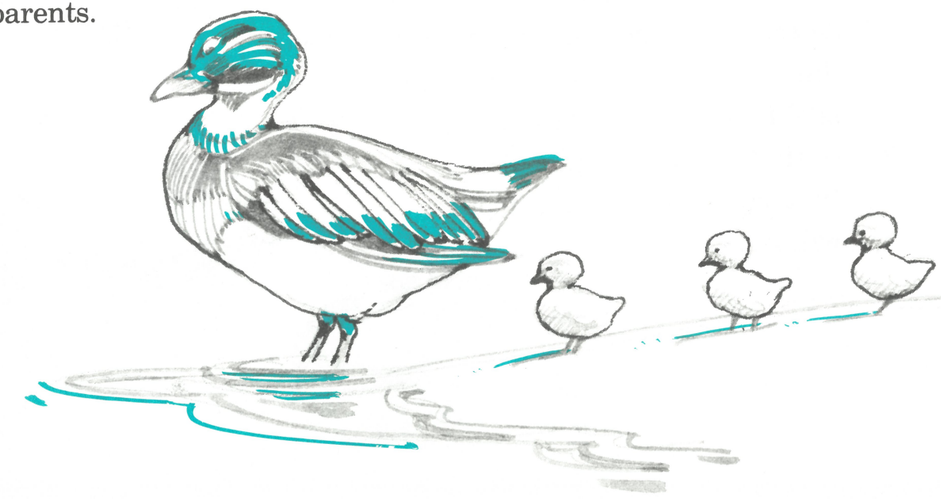


The eggs will not develop unless they are kept warm. The female is usually the one to sit on them. This is called *brooding*. The length of time before eggs hatch depends on the type of bird. Hummingbird eggs hatch in ten days to two weeks. An ostrich egg takes as long as six weeks.

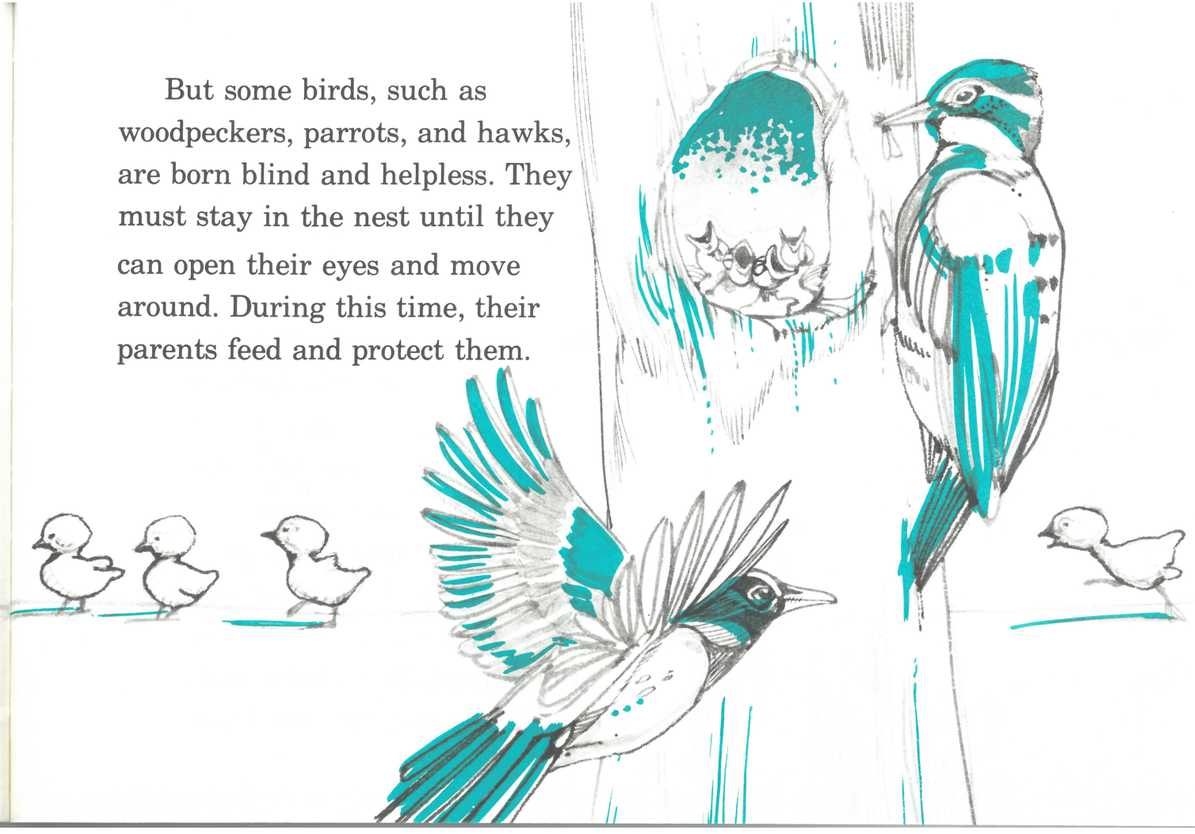
When the young bird is ready to hatch, it begins by bumping its egg tooth against the shell. The egg tooth is a hard little tip on the end of the beak used to crack open the shell. Little by little, the baby is able to open up the shell so that it can wriggle out. In a short time the egg tooth will fall off.

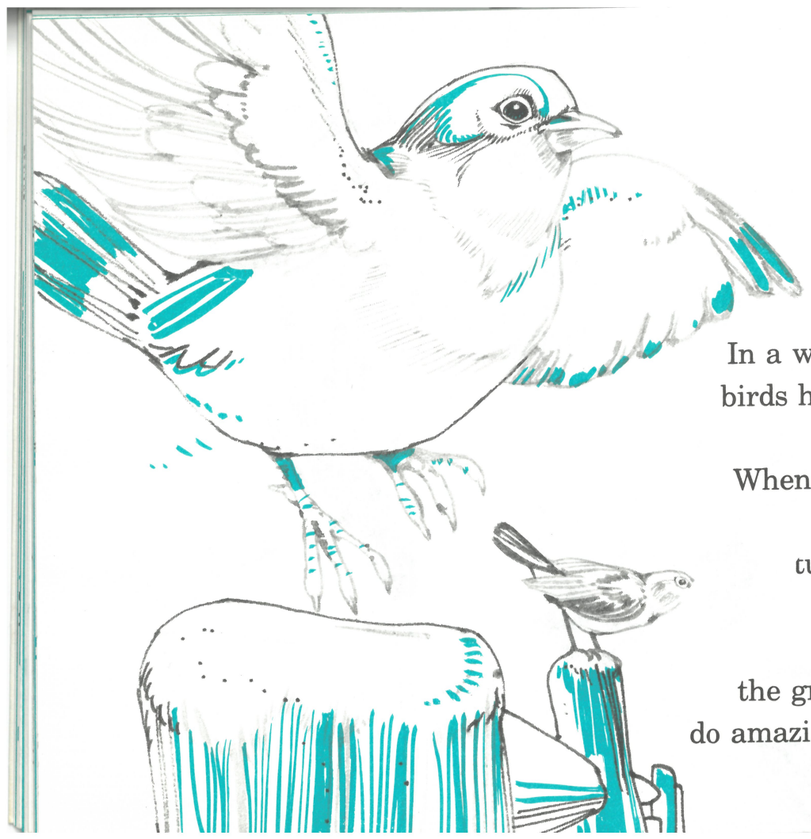


Most newborn baby birds are covered with soft furry down. Their eyes are usually open. By the end of the day they are able to feed themselves, run around, or swim with their parents.



But some birds, such as woodpeckers, parrots, and hawks, are born blind and helpless. They must stay in the nest until they can open their eyes and move around. During this time, their parents feed and protect them.



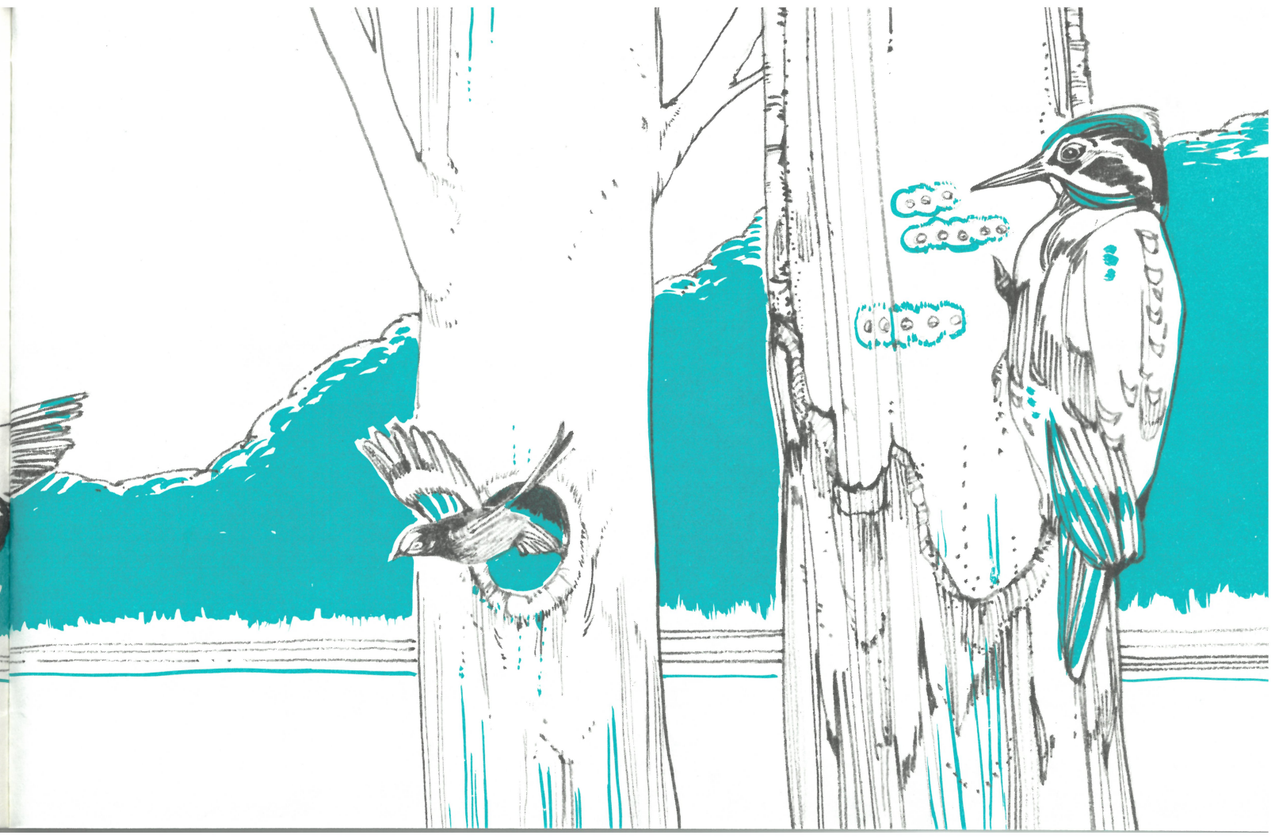


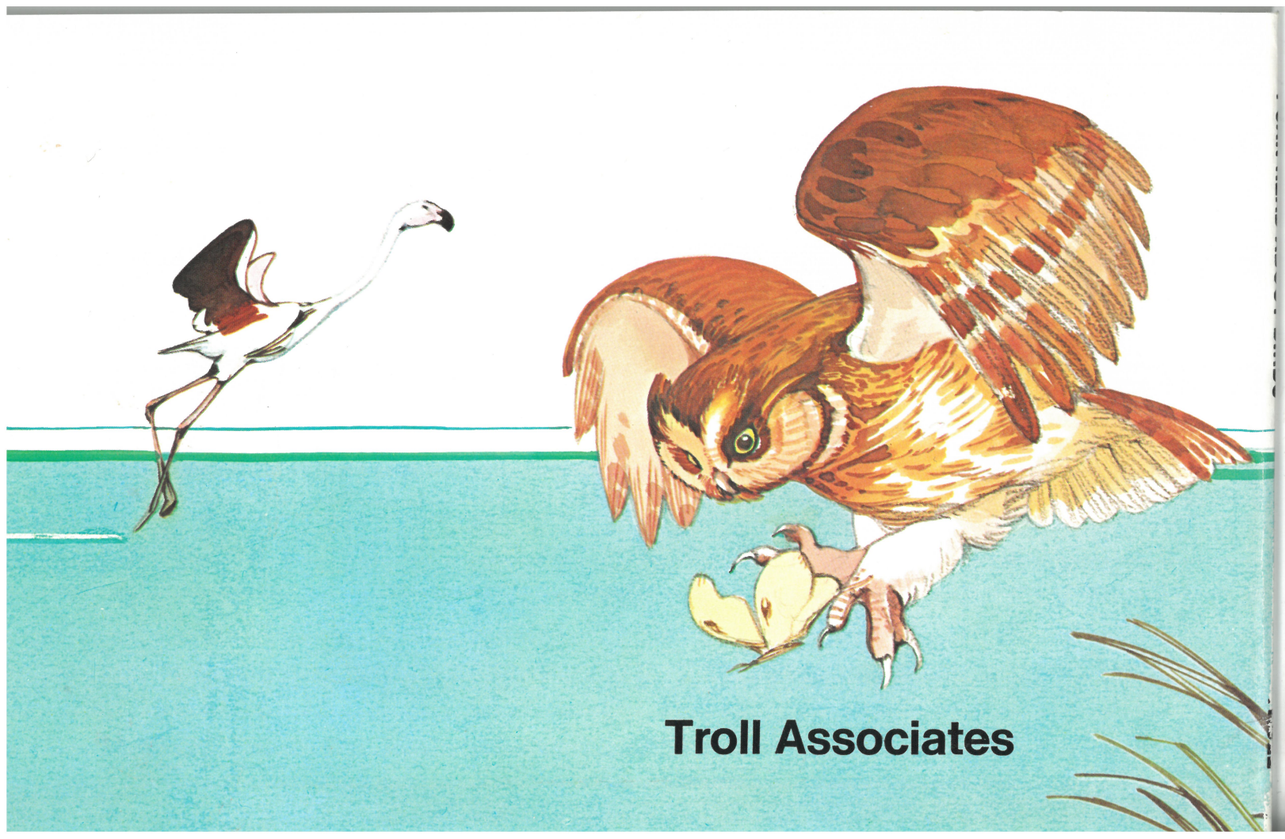
In a week or two, most young birds have grown full feathers and are ready to fly. When they hop over the edge of the nest, there is no turning back. They must either fly on their own the first time, or fall to the ground. Many baby birds do amazingly well the first time.

Their parents guide them until they are strong enough to be on their own.Then, they must find their own food and defend themselves against all enemies, for they will never return to the nest.

Now they are ready for the world. Now a new life cycle will begin again.

It all happens in the wonderful world of birds.





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